Auxiliary shelling machine for cereal, leguminous and esparto seeds.

HELPING TO SURVIVE

SURVIVING TO HELP

A. D´HERTZÁUREA

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INDEX

INTRODUCTION

The ***"SURVIVIR"*** machine, Model ***"ON THE GROUND"*** is not driven by a combustion or electric motor, but by a manually operated inertia motor. However, it can also be driven by a motor with a speed reducer connected by means of a cardan shaft to the inertia motor shaft.

It is a multi-purpose auxiliary machine for harvesting sorghum seeds, which are difficult to separate from the ear stalk. It threshes two ears of maize at the same time, and also helps to thresh the ears of rice, wheat, rye, barley and other cereals. It separates and cracks the pods of dried lupin, chickpea, bean, lentil, etc., seeds necessary for survival, and those of other leguminous plants, such as alfalfa, to help extend their cultivation for their nutritional benefits, medicinal properties and improvements to the soil of plots, mulching bare soil as green manure, thus helping beneficial bacteria in the soil to fertilise the farmland, among other things.

As an auxiliary machine, it facilitates the threshing of the seeds from the esparto ears. It is necessary to help to extend its cultivation in time in the limestone, marginal, uncultivated soils of municipalities, counties and countries with low rainfall rates.
Esparto grass will become an "industrial" crop in the not too distant future, driven by geopolitical changes and the systematic collapse of energy and economic vectors, which will drive the localisation of economies.

It is a crop that is compatible with the traditional crops that have been sustaining local economies, which are already coping with changing climatic factors and rainfall patterns.
In the book ***"Between Ether and Earth"****,* esparto grass is mentioned as a plant that will help the Humanity of the future.
It is time to start the multiplication and distribution of its seeds, extending its cultivation in soils not cultivated today, or with a tendency to desertification.

This auxiliary machine, as a furrow-foot seed collector, has been created, built and registered by *A.D'Hertzáurea* to be freely built by those who need it to survive. It could help in any part of the Earth, where all help will be little.
The time will come when the big machines will not be able to harvest even on land of a few hectares, because climatic factors, lack of rain, or too much water, will prevent the sowing, or the harvesting of what has been sown. This is already happening. As are cost increases due to high fuel prices. For this reason it will be necessary to collect ***"ON THE GROUND"***.

It is time to remember: To help you need to survive.

But truly it will not be possible to help without the cosmic-soul bodies incarnated in human bodies freeing themselves from the fields of low vibrational frequency energies - also called soul shadows - by being transformed into high vibrational frequency energies.

In other words, if man does not let go of the "magnets" attached to the soul, then they will attract that which corresponds to what man has caused and engraved in the soul in this or other incarnations on earth. For what he has thought, said or done to his fellowmen and to the beings and existences of the animal kingdom and the plant kingdom has created dense energies which have been engraved in the soul. Man also darkens his soul if he omits the help he could give to his fellowmen and to the beings of the Kingdoms of Nature, according to his possibilities, spiritual knowledge and circumstances.

This machine can be built with materials that can still be acquired or found. Many of its parts can be constructed from wood. As an auxiliary machine, sieves are needed to separate the seeds from the plant residues.

The explanations and photographs included in *"Helping to survive"* will help to build the machine, a gift from *A. D'Hertzáurea.*

NOTE : "Helping to Survive" has been translated with DeepL Translate.

DESCRIPTION OF ELEMENTS AND SYSTEMS

1- FRAME.

Built with 30x30x3 mm galvanised angles, 8 mm screws and self-locking nuts, it consists of the following elements:

< 2 galvanised angle pieces of 30x30x3 mm, 1,500 mm long in vertical position, feet of the FRAME **(nº 33./ FIGURE 10)**.

< 2 galvanised angle pieces 30x30x3 mm, 1,300 mm long in vertical position, frame feet **(No. 34 / FIGURE 11 and 20)**

< 4 galvanised angle pieces 30x30x3 mm, 660 mm long in horizontal position (No. 26 / FIGURE 4)

< 6 galvanised angle pieces 30x30x3 mm, 690 mm long in horizontal position **(No. 26 / FIGURE 4) .**

< 2 galvanised sheets, 690x150 x2 mm **(No. 26 / FIGURE 4)** .
< 2 galvanised angle pieces 30x30x3 mm, 900 mm long, (30º inclination), supports-guides for the 2 seed collecting trays **(nº 29 / FIGURE 7).**

<2 galvanised angle pieces 30x30x3 mm, 665 mm long, oblique position **(No. 26 / FIGURE 4).**

Note: **1**- All the galvanised angles of the FRAME, in horizontal or oblique position, are marked No. 26 and 29 in the photos.
2- All the holes in the angles for 8 mm screws must be drilled before assembling the BEAM. See the photos for the number of holes.

1.1- (Frame)

< 2 galvanised angle pieces of 30x30x3 mm, 1.500 mm long in vertical position **(nº 33 / FIGURE 10)**. They have 2 250 mm diameter wheels at the bottom for transporting the machine at the foot of the furrow **(nº 25 / FIGURE 13)**. It would be advisable to fit larger diameter wheels.

< The galvanised reinforcement bracket 30x30x3 mm, 700 mm long **(No. 30 /FIGURE 25)** joins the 2 vertical brackets of 1500 mm at the height of the axle of the 2 wheels.

On the inner side of each of the 2 1,500 mm corners (upper side of these 2 1,500 mm pieces) is screwed the galvanised piece with circular window **(No. 14 / FIGURE 24)**. On the outer side of each 1,500 mm corner are screwed the 2 side pieces of 1/4 circle of the HOPPER **(No.3 /FIGURE 4)**.

1.2 - (Frame)

< 2 pieces of 30x10 mm plate from the transport handle (400 mm long) bent in a curve (90º) **(nº 20 / FIGURE 23)**. They are bolted to the top of the 2 1500 mm corners of the frame **(No. 33 / FIGURE 10).**

Both plates are welded to the 34 mm diameter x 695 mm long tube for transporting the machine **(No. 13 / FIGURES 9 and 10)**.

1.3 - (Frame)

< 1 Steel tube 34 mm diameter, 695 mm long, welded at the ends to the 2 pieces of steel plate of the transport handle of the machine **(No. 13 / FIGURES 9 and 10).**

1.4 - (Frame)

< 2 angle pieces of 30x30x3 mm, 60 mm / length **(Letter M./ FIGURE 23)** bolted to the 2 pieces of the transport handle plate **(nº 20 / FIGURE 23)**. The HOPPER Pressure Hatch **(No.12 / FIGURE 23)** is supported on these 2 pieces when the hopper is being loaded with ears of sorghum and other cereals, and dried plants with pods of leguminous plants, etc., which are to be threshed.

1.5 - (Frame)

< 1 galvanised angle piece of 30x30x3 mm of 690 mm **(nº 32./FIGURE 23)** where the 2 hinges of the pressure hatch are screwed on its horizontal side **(nº 12 / FIGURE 9).** This piece is attached to the upper part of the 2 pieces of galvanised angle 1.500 mm long, vertical position, **(nº 33 /FIGURE 10).**

2- CHASSIS bolted to the FRAME.

Consisting of:

< **Bedplate** constructed of 80x40x2 mm rectangular steel tube, 680 mm long **(no. 7 / FIGURE 1).** It is fixed with 8 mm bolts and self-locking nuts to:

< 2 galvanised angle pieces 30x30x3 mm, 275 mm long, **(no. 4 / FIGURE 10).**

These 2 galvanised angle pieces are fixed to the 2 side pieces of 2 mm galvanised sheet metal, **(No. 2 / FIGURE 7).** In turn, these 2 pieces of galvanised sheet metal are fixed to the FRAME, to the 2 angles of 1,500 mm, with 8 mm screws and self-locking nuts **(No. 33 /FIGURE 10).**

3- CORN COB SHELLING SYSTEM.

[**NOTE** : Farmers who have a manual corn cob sheller can attach it to the Bedplate **(nº 7 / FIGURE 1)**, and not build the Corn Cob Shelling System, if they wish to do so. The corn kernels will fall into the inclined receiving tray, **(No. 18 / FIGURE 25)**, located underneath the Chassis Bed **(No. 7 / FIGURE 1)**.
From this tray the maize grains pass to the inclined tray **(No. 19 / FIGURE 18)** and fall into the containers].

- CORN COB SHELLING SYSTEM -

It consists of :

3.1

INERTION MOTOR DISC, (nº 1 / FIGURE 1), 300 mm in diameter and 14 mm thick. It is obtained from a steel anchor plate of 350x350x14 mm, used in the construction of buildings. For shelling the cobs, 132 teeth of 6 mm in diameter x 20 mm long are pressed into the cobs. The teeth are made from 6 mm smooth-necked screws.
At 20 mm from its edge, this **Inertia Motor disc** has 2 holes drilled in each of the 4 diameters drawn at 45° to each other, with vertices in the centre of the disc.
The 8 holes are for 8 mm screws, which join the **Inertia Motor Disc** to the **Threshing Disc (nº 8 / FIGURE 1).**

The **Inertia Motor Disc** has a 19 mm hole drilled in the centre and 14 mm internal thread, where the **Inertia Motor Disc** Shaft is threaded **(6. SHAFT / FIGURE 21**).

[We send the scanned "***Circular cardboard with perforation points"***. If this is printed, pasted on a cardboard and cut out, the circle can be superimposed on the **INERTIA MOTOR DISC**, marking the points where the teeth will be embedded with a metal marker. In this way, the spirals do not have to be drawn].

STEPS FOR EMBEDDING 132 TEETH IN THE INERTIA MOTOR DISC.

- On a circular cardboard with a diameter of 220 mm, first draw an Archimedean spiral 20 mm wide between the curved lines, which is the result of dividing the straight horizontal line drawn on the diameter into 20 mm segments.

- In the middle of the width between the curved lines, another parallel spiral is drawn, so that there is 10 mm width between the curves.

In the case of the disc of the inertia motor of this machine, segments of 25 mm and 20 mm are marked on these curved lines of the spirals to indicate the points where the teeth are embedded.

- In the centre of the circular cardboard, a circle with a diameter of 19 mm is cut out, equal to the perforation in the centre of the disc of the Inertia Motor.

- This cardboard is superimposed on the disc of the inertia motor with the marked points where the teeth are to be placed and fixed to the disc at about eight points.

- With a hammer, a metal chisel placed on each point of the cardboard where the teeth are located is struck several times. The cardboard is separated from the **Inertia Motor Disc** and the points where the teeth go are marked.

- Once the **Inertia MotorDisc** is placed on the base of a drilling machine, it is drilled at the points marked with the chisel:

- First, drill 11 mm holes with a 4 mm drill bit at all the points marked on the disc. Then the 4 mm drill bit is replaced by a 5.75 mm drill bit, and each of the holes drilled with the 4 mm drill bit is drilled.

Each 6 mm diameter, 20 mm long tooth is pressed into each hole, with one end slightly rounded to facilitate entry into the 5.75 mm hole. Each tooth is tapped with a hammer until 10 mm of the tooth remains on the surface of the **Inertia Motor Disc (FIGURE 19).**

To ensure that all the teeth are exactly 10 mm above the surface of the **Inertia Motor Disc,** the following tool is constructed: "In one corner of a piece of iron plate (80 cm x 30 cm) 10 mm thick, make two "L" shaped cuts 10 mm deep and 8 mm wide, leaving 22 mm at this end of the plate.

Insert the rounded part of the tooth into the 5.75 mm hole with a hammer blow. Place the "L" end of the vertical piece of the plate (10 mm) over the tooth. Hammer until the 22 mm base of the plate touches the surface of the **Inertia Motor Disc**. In this way, only the 132 embedded teeth protrude 10 mm above the surface of the inerti disk.

3.2

INERTIA MOTOR DISC SHAFT . (6. SHAFT/ FIGURE 21).

- MECHANISM FOR SHELLING COBS BY PRESSURE ON THE TEETH OF THE INERTIA MOTOR DISC.

The **Inertia Motor Disc Shaft** is 19 mm in diameter and 220 mm long. At one end it has 28 mm of threads: 14 mm to be threaded into the centre of the **Inertia Motor Disc.** The other 14 mm of threads are for a counter nut, which when tightened against the **Inertia Motor Disc** prevents it from unscrewing. Once the shaft is tightened, the shaft can be welded to the front face of the motor disc.

The other end of the Shaft first penetrates the 20 mm diameter hole of the 160x40x8 mm plate **(FIGURE 3)** to which are welded the pieces 5. I - Left, and 5.D - Right **(mechanism nº 5 /FIGURE 3)**, with the shape of a channel, where two cobs are placed, which the mechanism presses against the teeth of the **Inertia Motor Disc** being shelled simultaneously. At the bottom of the inside of each piece / channel-5 is located the screwed piece that holds the cob (galvanised piece / **FIGURE 27).**

<Each piece / channel has been constructed from half of an 80 mm / diameter x 190 mm long x 6 mm thick tube. Each Piece / Channel has welded on:

<2 screws of 8 mm diameter and 110 mm long, in which 4 pressure springs are inserted, one in each screw of 110 mm, with their corresponding washers, nut-wheels and threaded hexagonal joints of 30 mm, manufactured to join studs of 8 mm diameter.

The mechanism formed by the parts/channel-5 and the above-mentioned elements slides (backwards and forwards) on the **Inertia Motor Disc Shaft**. I and 5. D, together with the elements of the Cubic Mechanism (60x60x60 mm, **(Nº 6/FIGURES 2-3-5-7-21-26-and 27)** is to press the cobs against the teeth of the **Inertia Motor Disc.**

Before the end of the **Inertia Motor Disc Shaft (6. SHAFT/photo)** is inserted into the 20 mm hole of the cubic mechanism (60x60x60 mm), the bushing **(No. 6. 7)** of 20 mm hole and fixing screw to the **Inertia Motor Shaft**, located between the PLATE welded to the 2 pieces/channel (Right / Left) and its elements, and the **Cubic Mechanism** (60x60x60 mm, **(nº 6 / FIGURES 2-3-5-7-21-26-and 27)**.

3.3

HANDLE. (nº 9 / FIGURE 25).

Once the cubic mechanism is crossed by the shaft, the **HANDLE** is fixed at its end with a tightening screw. This mechanism rotates the **INERTION MOTOR DISC** clockwise to make the machine work.

4- SYSTEM OF TECHNICAL ELEMENTS TO LOAD AND SHELLING TWO COBS AT THE SAME TIME.

It is composed of :

4. 1 - **Cubic mechanism** 60x60x60 mm **(nº 6 FIGURES 2-3-5-7-21-26-and 27)**.

4. 2 - Left side flap and triangular reinforcement, built with plate of. 60x55x8 mm (no. 6.1 / photo). It has 2 holes of 11 mm/diameter.
In these penetrate the 2 screws of 110 mm length and 8 mm / diameter welded to the piece / channel 5-I.

4. 3- Right side rail and triangular reinforcement, made of 60x55x8 mm plate **(no. 6.2/ photo).** It has 2 holes of 11 mm/diameter. In these penetrate the 2 screws of 110 mm length and 8 mm / diameter welded to the piece / channel 5- D.

4. 4 -Both flaps are welded to the **cubic mechanism** of 60x60x60 mm **(nº 6/ photo).**

4. 5- Lever **(nº 6.3 / photo)**, which separates and brings closer to the **Inertia Motor Disc** the 2 Parts / channel 5-I and 5-D in which the 2 ears of corn are deposited.

4. 6- Two flat pieces / right - left, of 78 mm x 20x 1.5 mm **(nº 6.4 / photo)** to fix and articulate the Lever **(nº 6.3 / photo).**

4. 7- Machined part with 2 side holes **(no. 6.5 / photo).** It is screwed to the plate of 160x40x8, above the 20 mm hole through which the **INERTION MOTOR DISC SHAFT** slides.
To its two lateral holes are fixed and articulated the 2 plates of 12 x 130 mm **(nº 6.6 / photo)**.

The 60x60x60 mm Cubic Mechanism (No. 6/ FIGURES 2-3-5-7-21-26-and 27) is the INERTION MOTOR DISC SHAFT BEARING.

It has a 20 mm diameter hole in which the **INERTION MOTOR DISC SHAFT (No. 8 / FIGURE 2**) rotates, attached to the **INERTION MOTOR DISK (No1 / FIGURE 1).**

- The Shaft passes through the Cubic Mechanism, lubricated through the conical bore in the centre of the upper face, where the lubricating oil is deposited. This conical bore is connected to the 20 mm bore / bearing.

[**Note:** This **Cubic Mechanism** can be constructed from a piece of seasoned wood, with a certain hardness, 180 mm. long, 60 mm. high and 60 mm. wide. The holes are drilled with wood drill bits, suitable for the bronze or steel bushings where the Inertia Drive Shaft and the through bolts of 110 mm. length are inserted and rotated].

4. 8 - On the upper face of the **cubic mechanism (nº 6 / photo) -** area of its four vertices - there are four holes for 4 hexagonal head through bolts of 8 mm diameter and 125 mm length, with threads in the last 30 mm.

- These 4 bolts with self-locking nuts join the cubic mechanism to the transversal **BANK (nº7 / FIGURE 1).**

This Base Plate attached to the CHASSIS supports the MAIZE DEGRAINING SYSTEM and the **CEREAL, LEGUME, CELFLOWER AND SPIDER SEED DEGRAINING SYSTEM.**

- These 4 screws join to the upper face of the 60x60x60 mm **Cubic Mechanism** 2 pieces (**right/left, nº 6.4 / photo)** of 78 mm x20x1.5 mm with 2 holes each piece for through bolts of 8 mm diameter, and 1 lateral hole in the 90º bent flange for a through bolt of 75 mm length and 6 mm diameter.

- This bolt + 2 bushes of 20 mm and self-locking nut articulates and connects the lever **(no. 6.3 / photo)** of square tube 16x16x 250 mm to the 2 pieces of 78x2x1.5 mm through the cross hole at the bottom of the lever.
In the other cross hole of the lever, 50 mm from the first hole, 2 plates of 12 x 130 x 2 mm **(no. 6.6 / photo)** are attached with a 6 mm through bolt. These 2 plates are joined and articulated through the holes at the other end to the side holes bent at 90º of the machined part **(nº 6.5 / photo)** of 30x50x2 mm, by means of a bushing and a through bolt of 6 mm diameter . This part **(No. 6.5 / photo)** is screwed to the 160x40x8 mm plate above the 20 mm hole through which the **Inertia Motor Disk Shaft** slides. This plate is welded to the two Parts / Channels 5-I and 5-D, where 2 ears of corn are placed.

5- HOPPER (FIGURE 28)

It has a capacity of 200 litres. Built on a 30x30x3 mm galvanised angle frame. The loading of cereal ears, dried leguminous plants and alfalfa or esparto ears is carried out from the upper part.

-It consists of:

5.1- Curved base, 620 mm radius, 1/4 circle, with a rectangular bottom of 1,020 mm x 680 mm, made of galvanised sheet, or aluminium, 1 mm thick.(**nº 10 / FIGURE 11).**

Under the round window, the 3 fixed saw blades, and above the collecting tray nº 18, 75 perforations of 8 mm in diameter have been made **(FIGURE 24)**, in 3 parallel bands of 25 holes per band, to pass to the collecting tray the shelled seeds that could be released from the ears by the action of the elements of the **SHREDDING DISC.**

5.2 - 2 sides of 1/4 circle, 90° angle, 620 mm radius, made of perforated sheet metal 1.5 mm thick, holes 4 mm in diameter) **(No. 3 / FIGURE 4)**.

The vertical sides of the 90° angle of these 1/4 circle sides are attached to the 1,500 mm long galvanised angle **(No. 33 / FIGURE 10)**. The horizontal sides of the 90° angle are attached to the horizontal galvanis.

5.3 - 3 curved steel plates of 30x2 mm, 1050 mm long **(nº 17 / FIGURE 11**), located under the curved bottom of the **HOPPER.**

5.4 - In the 2 mm thick, rectangular, 685 mm x 670 mm piece of galvanised sheet metal, attached to the frame in a vertical position **(No. 14 / FIGURE 24)**, a circular window 610 mm in diameter has been made.

This part communicates through the circular window of 610 mm / diameter with the **GRINDING DISC** of 660 mm / diameter **(nº 8 / FIGURE 5).**

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Diametrically crossing the circular window of the 685x670x2 mm part, 3 sharp saw blades of 775 x30x2 mm **(nº 21 /FIGURE 24)** are fixed with 8 mm section screws. These blades are referred to in the **AUXILIARY GRINDER SYSTEM.**

6- PRESSURE DAMPER. (Nº 12 / FIGURE 9).

It has an articulated device **(nº 16 / FIGURES 24 and 12)** in the front part of the **FRAME** so that the Pressure Gate remains fixed in a horizontal position on the **HOPPER** or starts to press the mass of ears of corn or legumes deposited in the **HOPPER,** pushing them towards the **GRINDER DISK**, located in a vertical position at the bottom of the **HOPPER,** which rotates driven by the **INERTION MOTOR** until the **PRESSURE GATE** is in a vertical position, indicating that the **HOPPER** has been practically emptied.

The seeds and vegetable remains fall into the inclined trays **(nº 18 and 19 of the photos)**, passing into boxes or containers placed at the end of the last tray **(nº 19 / photo)**, at the front of the machine.

As an auxiliary system, the contents of the box or container must be sieved. If there are pieces of grain ears with seeds attached, or pieces of legumes with some pods, they are put back into the **HOPPER** when it is filled again.

The Pressure Hatch is made of 2 mm galvanised sheet metal, with a handle **(FIGURES 9 and 23)**, 80 x 30 mm hinges, rivets, 5 mm bolts and self-locking nuts.

7- GUILLOTINE AND AUXILIARY ELEMENTS.

The main function of the **GUILLOTINE** is to separate the ears of grain from the stalks. The cut ears are deposited in the **HOPPER** to be threshed.

The stalks/stalks of the cereals can be chopped up with the **GUILLOTINE** and left directly covering the soil, or some alpacas are made to feed the accompanying herbivorous animals. Or they are chopped up with the **GUILLOTINE**, piled up in shady areas, covered, watered and aerated to obtain mature compost for planting in the vegetable gardens.

The **GUILLOTINE** of this machine **(No. 11 / photo)** has the elements that can be seen in **FIGURES 6-14-18-20-24** :

11- Guillotine blade AND handle, hinged on the chassis attached to the frame of the machine.

11.1- Guillotine chassis, with the slit where the blade penetrates and cuts the bundles of canes / stalks with spikes.

11.2 and **11.3**- Perforated metal sheets (right / left) which channel the spikes to the inclined tray **(nº19 / photo),** falling into the prepared containers, and from these they pass to the **HOPPER** with a curved base, situated next to the guillotine.

11.4- Piece attached to the guillotine chassis where the bundles of canes / stalks of cereals are supported to cut the ears of grain, which will fall into the inclined tray.

11.5- Vertical guide of the guillotine handle / blade support. This guide is fixed to the chassis and to the vertical - right angle of 1.300 mm of the machine frame.

- The Guillotine and auxiliary elements have been constructed with:

- 30x6 mm and 30x3 mm flat bars.
- 2 mm galvanised sheet metal.
- Steel sheet for the blade.
- Galvanised angles of 30x30x3 mm.
- Perforated sheet metal with 4 mm holes
- 8 mm diameter hexagonal and Allen screws, self-locking nuts, washers and polyethylene tube.

8- AUXILIARY SYSTEM FOR SHREDDING CEREAL SPICES, RESTRAINING LEGUME SHELLS AND COLLECTING SPIDER SPICES AND SEEDS.

It consists of the following elements:

1- DISC OF THE THRESHING SYSTEM (Nº 8 FIGURE 1 and 5).

It threshes the ears of sorghum (the seeds adhere strongly to the stalks of the ears), rice, wheat, rye and other cereals, breaks the dry pods of lupin, chickpeas, beans, lentils and other leguminous plants, loosens the seeds of the dry flowers of alfalfa and esparto, chopping the dry stalks of these plants **(FIGURE 24).**

This threshing disc is attached to the **INERTION MOTOR DISC** with 8 mm diameter

screws, which is threaded onto the 190 mm diameter and 220 mm long shaft **(No. 8 / photo).**
Both discs rotate clockwise through the **HANDLE (No. 9 / FIGURE 25)**.
Made of 1.5 mm perforated plate, with 4 mm / diameter holes, 660 mm in diameter.

GRINDING SYSTEM DISK.

Contains :

1.1- Four long blades (4), 320 mm long, perforated at their ends, joined at one end in the centre of the disc with an 8 mm diameter hexagonal head bolt on a 30 x 11 mm hexagonal joint, internal thread, to join 8 mm/diameter studs.
At the other end, each blade is attached to the **GRINDING DISK** 40 mm from its edge with an 8 mm diameter hexagon socket head cap screw on another 30 mm hexagon socket **(No. 8 / photo).**
In addition to the hexagon head bolts, standard and self-locking washers and nuts are used to attach the blades and the knives to the **GRINDER DISC.**

Hexagonal joints of 30 x 11 mm mark the distance of all blades and ropes to the GRINDING DISC : 300 mm.

The blades are made of 27 mm wide, small-toothed steel saw blades for wood-cutting machines. Each long blade is riveted with a wood saw blade, 20 mm wide, large tooth, 300 mm long **(no. 22 / photo)**.

Viewed from the front of the **SCREWDRIVER DISC,** when turning it clockwise, the teeth of the right-hand blade should face downwards and the teeth of the left-hand blade should face upwards when the blades are mounted.

1. 2- Four short blades (4) **(No. 23 / photo)**, 200 mm long, made from the same small-toothed saw steel blades and the large-toothed overlapping blades. They are perforated at the ends. One of these is connected to the **GRINDING DISC** by the same screw and hexagonal joint that connects the **INERTION MOTOR DISC** to the **GRINDING DISC**. Bearing in mind that they rotate clockwise, the teeth of the right-hand blade must also face downwards, and those of the left-hand blade upw

1.3 - Eight (8) 1.5 mm diametrical ropes, 595 mm long, tensioned by self-constructed tensioning bolts with 8 mm diameter bolts and 30 x 11 mm hexagon sockets, internal thread, used to join 8 mm diameter threaded studs.

The diametrical distance between each two tensioning bolts connecting the hanger bolts to the **SCREW DISC** is 575 mm.
Washers, standard and self-locking nuts and nuts are used **(nº 17- 24 /photo).**

1.4- Two semicircular side plates of galvanised sheet metal or aluminium, 30 x 1 mm **(nº 31 / FIGURE 15)**, placed vertically inside the **GRINDER DISC (nº 8 photo)**, are supported against the hexagonal joints and screws that fix the blades and the ropes to the **GRINDER DISC**. These two pieces **(nº 31 / PHOTO)** are fastened by their ends to 2 hexagonal joints and screws of the knives and ropes, leaving a space between each 2 of their ends to allow the shelled seeds to exit when the

SHREDDER DISK is rotated.

1.5- The edge of the shelling **DISC** is fitted with a black protective strip - weatherstrip **(nº 8 / photo).**

2- GALVANISED PIECE of 685 mm (width) x 670 mm (height) x 2 mm (thickness), joined vertically to the 30x30 x3 mm galvanised angles **BASE (nº 14 / FIGURE 24)**.

A 610 mm diameter circular window has been opened in this galvanised piece with a jigsaw, closing the **HOPPER.**

3- THREE 775 mm FIXED SAW BLADES, **(nº 21 photo)** diametrically crossing the circular window. They are attached with 8 mm section screws to the 685 x 670 x 2 mm galvanised sheet metal in vertical position, inside the **HOPPER**. One blade is attached horizontally. The other two blades are attached in the **(X)** position. Behind the **circular window** is the **GRINDING DISC.**

4- Semi-circular protector of the elements attached to the GRINDER DISC in movement (nº 15 / FIGURES 4 and 10) **which prevents the seeds from being thrown out of the machine while the GRINDER DISC is rotating.**

- OPERATION OF THE SYSTEM -

In each of the two radii of the blades fixed "diametrically", saw teeth have been manually built (each radius starting from the centre of the 780x30x2 mm steel blade) in the opposite direction to the teeth of the radius of each of the blades fixed to the **GRINDING DISC** in movement **(nº 8 in the photo),** producing the dragging of the pins that penetrate through the circular window being pushed towards the **GRINDING DISC** by the Pressure Gate. The pins are shelled as they meet the teeth of the 3 fixed blades screwed to the 685 x 670 x2 mm piece, fixed to the machine's **FRAME**, diametrically crossing the circular window.

WE REPEAT: The shelling of the ears of grain, the cracking of the dry pods of leguminous plants, or the detachment of the seeds from the dry stalks of alfalfa or esparto grass, as they are shaken and dragged in a circle by the ropes and blades attached to the **SHREDDER DISK** by tensioning screws **(nº17/ FIGURE 24**) as they

close, with vertex in the centre of the **GRINDER DISC**, the angle formed by the fixed toothed blades **(nº21/photo)** and the long and short toothed blades **(nº22 and 23/photo)** connected to the **GRINDER DISC (nº8/ FIGURES 1 and 5)** set in motion by the **INERTION MOTOR (nº 1 / FIGURE 1 and 5)** driven by the **HANDLE**. **(nº 9 / FIGURE 25).**

9- SEED COLLECTION ELEMENTS.

These are:

1- **Seed collection tray 630 x 350 mm, (no. 18 / FIGURE 25)**. Formed by a rectangular galvanised sheet 2 mm thick and 624 x 350 mm.
624 x 350 mm, and a 30x30x3 galvanised angle of 625 mm, with an incorporated handle to extract the tray or place it in the guide angles, joined in an oblique position (30º) to the 1,500 mm angles **(nº 33 /FIGURE)** and 1,300 mm **(nº 34 / FIGURE)** of the **FRAME** in a vertical position.

The grains of maize and other cereals and pulses will fall into the inclined receiving tray, **(nº 18 / FIGURE 25)**, located underneath the **CHASSIS BANK** and the **SHREDDER DISK (nº 7 / FIGURE 25).**

From this tray **(nº 18)** the grains / seeds pass to the tray also inclined (30º), **(nº 19 / See photograph)**, of 624 x 590 x 2 mm, falling into the containers located at the front of the machine.

The left and right curved blades **(nº 27 / FIGURE 10)** channel the shelled maize and other cereals and leguminous grains into tray **nº 18. From tray 18 they pass to tray 19.**

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- PHOTO ALBUM -

NUMBERED FIGURES WITH PHOTOGRAPHS

OF THE SYSTEMS AND ELEMENTS OF THE MACHINE

" SURVIVAL" BRAND, "WALK-BEHIND" MODEL

TO ASSIST IN ITS CONSTRUCTION.

FIGURE 1

FIGURE 2

FIGURE 3

FIGURE 4

FIGURE 5

FIGURE 6

FIGURE 7

FIGURE 8

FIGURE 9

FIGURE 10

FIGURE 11

FIGURE 12

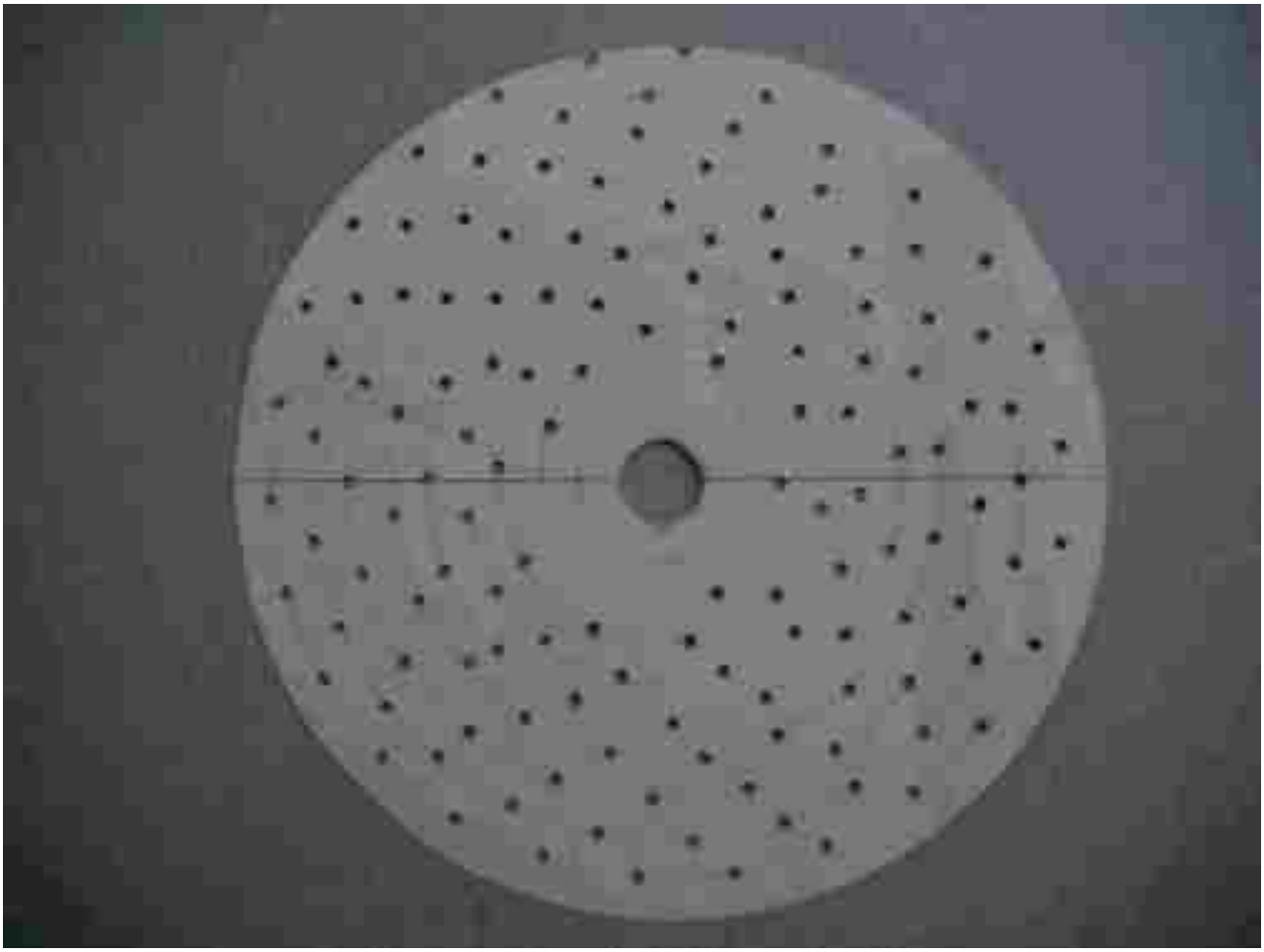
FIGURE 13

FIGURE 14

FIGURE 15

In this figure you can see the fixing brackets, and the 30 mm separation between the Threshing Disc and the long and short toothed blades, the tensioned ropes (nº 24), the circular channelling piece nº 31, and the toothed blades (nº 21) diametrically crossing the vertical circular window that forms part of the TOLVA.

FIGURE 16



- The actual diameter of the INERTION MOTOR DISC of this machine is 300 mm.

FIGURE 17

FIGURE 18

FIGURE 19

FIGURE 20

FIGURE 21

FIGURE 22

FIGURE 23

FIGURE 24

The articulated mechanism (nº 16) rests on part nº 26 when the TOLVA is full and the PRESSURE COMPUTER is dropped on the ears of grain or dry leguminous plants, as an example.

To this piece (26) are screwed the 3 curved plates (nº 17) that support the curved bottom of the TOLVA, (nº 10).

Joined to the 2 angles of 1,300 mm of the BASTIDOR, and to the front horizontal transversal angles, it forms the 90º angles of the front of the machine's BASTIDOR, together with the other piece (26), which is also part of the external elements of the GUILLOTINA (FIGURE 20).

FIGURE 25

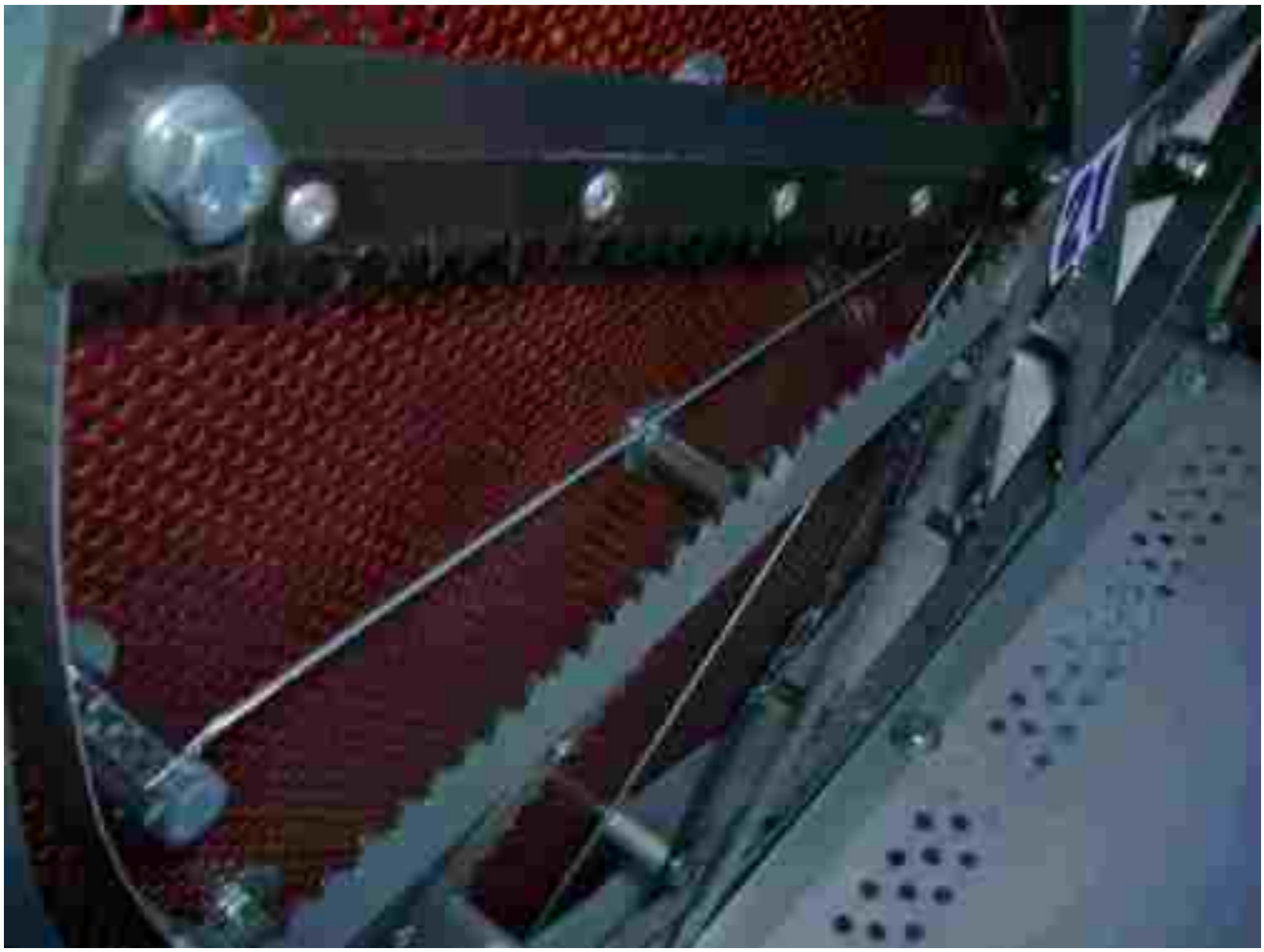
FIGURE 26

FIGURE 27

At the bottom of the inside of each channel piece is the bolted piece that holds the cob (galvanised piece / FIGURE 27).

FIGURE 28

FIGURE 29



This photograph shows one of the tensioning bolts of the cords, one of the long rotating saw blades attached to the GRINDER DISC, and one of the fixed saw blades attached to the circular window (FIGURE 24).

11- TEXT.

Where is everyone's heart in the hour of this World?

The situation is truly critical for the inhabitants of planet Earth. Also for all beings and existences of the Kingdoms of Nature housed by Mother Earth.

Animals and plants, crystals and minerals are manifestations of the Love of the Creator Father made form, thus visible to His sons and daughters who inhabit the Earth, the homeland of Lovelessness.

Many, infinite sons and daughters of God in all the Peoples of the Earth are submerged in the pit of pain and suffering, from which they cannot extricate themselves.

It is necessary to carry them in our hearts, to love by loving them, by giving Love to the sick, to our brothers and sisters in Life who suffer hunger and thirst, the rain, the cold and the scorching sun without a roof over their heads, without a bed where they can wait for death with dignity, in the solitude of the days and nights.

And so suffer and die also the countless billions of fellow animals, trees, shrubs and plants, our brothers and sisters in Life.

For many, the drums of war sound far away.
For many others they sound behind the doors of their homes.

They need to become pillars of gold to which many can cling in the turbulence and endless storms. They need to light the Flame of Hope. To ring like golden bells in the night is the goal. For this and much more we have come as countless cosmic beings to Earth.

All the Love we can give will be little, for infinite is the need of being loved that all beings and existences that sail on the ship *Earth* have.

"Save all that can be saved is the watchword. "

Bear in mind in thought: *"The barge of salvation will come from the inner sea, with Christ's Pole shining in the night of this World."*

Peace, Peace, Peace. Your brother A. D'Hertzáurea.